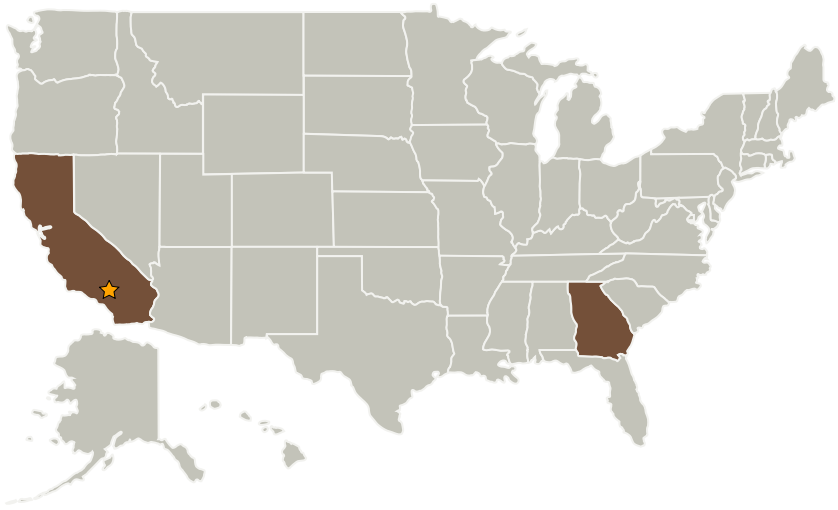
A Safe, Legal, and Autonomous See-and-Avoid System for UAVs, Phase I

Completed Technology Project (2006 - 2006)

Project Introduction

Aerotonomy, Incorporated, and subcontractors Georgia Tech and the AAI Corporation will combine state-of-the-art adaptive UAV control, optimized sensor suites, innovative strategic and tactical maneuvering systems, and a wealth of experience in manufacturing and operating Tactical UAVs (including the Shadow 200) to create a practical and autonomous See-and-Avoid System (SAAS) for safe UAV operations within the National Airspace System (NAS) and outside of Special Use Airspace. The SAAS will enable UAVs to autonomously perform both strategic maneuvering to follow the same predictable "right-of-way rules" followed by manned aircraft, as well as tactical maneuvering to perform close quarter collision avoidance. The primary innovation in this project is the Strategic Maneuvering System (SMS), a rule-based "maneuver executive" that will enable a UAV to interact with manned aircraft or other UAVs in a manner that is predictable and consonant with NAS operating procedures.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Armstrong Flight Research Center (AFRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Armstrong Flight Research Center(AFRC)	Lead Organization	NASA Center	Edwards, California
Aerotonomy, Inc.	Supporting Organization	Industry	Lithia Springs, Georgia

Primary U.S. Work Locations	
California	Georgia

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX10 Autonomous Systems
  - TX10.2 Reasoning and Acting
    - TX10.2.4 Execution and Control